

REMARKS

Claims 2-14, 16-21, 27-31, and 33 are pending herein.

1. Claims 2-14, 16-21, 27-31 and 33 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ignatiev et al. alone or R. Nenetschek et al. "Continuous Coated Conductor Fabrication by Evaporation" in combination with Ignatiev et al. further in combination with JP 02-118075 and JP 02-118061 still further in combination with Goyal et al., "Processing of High Temperature Superconductors" still further in combination with Glowacki et al. (6,251,834). This rejection is respectfully traversed for the following reasons.

The presently claimed invention is directed towards a method of forming a superconductive device. The presently claimed invention particularly calls for annealing a metal alloy substrate after cleaning to relax the crystalline structure of the substrate tape. Additionally, the surface of the substrate remains randomly textured during annealing. Further, the claimed invention calls for depositing a biaxial texture buffer layer upon the polycrystalline and randomly textured substrate using ion beam assisted deposition. The depositing is carried out after annealing. Applicants have discovered the annealing step contributed to reduction in surface defects on the substrate tape, resulting in a high degree of texture of the buffer layer and a high quality superconductor layer. Applicants note that the surface of the substrate remains polycrystalline and randomly textured throughout the process, rather than adopting a cubic texture during the annealing step.

The PTO acknowledges that Ignatiev, Nenetschek, JP 02-118075, JP 02-118061, and Goyal fail to teach annealing the substrate. As such, the PTO relies upon Glowacki for teaching of an annealing step. Glowacki discloses a two-step annealing process including a first stage at about 300° to establish a cubic texture, followed by a high temperature anneal at 700°C for grain growth (Glowacki col. 2, lines 50-53). That is, the annealing step of Glowacki imparts a non-random cubic texture to the substrate. In contrast, in the claimed invention, the buffer layer is deposited on a randomly textured substrate after the annealing step. Furthermore, Glowacki suggests annealing prior to cleaning (Glowacki, col 3, lines 20-25) and annealing after depositing the MgO buffer layer (col 4, lines 9-13) rather than annealing after cleaning and before depositing the buffer layer as claimed. Any feasible combination of Glowacki with the teachings

of Ignatiev et al., R. Nenetschek et al, JP 02-118075, JP 02-118061, Goyal et al. would yield a method that relies upon annealing the to form a textured substrate (cubic texture) as a template for the growth of the biaxially textured buffer layer, rather than to relax the crystalline structure. As such, the cited prior art fails to teach or suggest to one of ordinary skill in the art annealing a substrate tape after cleaning to relax the crystalline structure and depositing a biaxially textured buffer layer by ion beam assisted deposition to overlie a polycrystalline and randomly textured first opposite major surface of a substrate tape after annealing.

For at least the forgoing reasons, Applicants respectfully submit that the presently claimed invention would not have been unpatentable over Ignatiev et al., R. Nenetschek et al, JP 02-118075, JP 02-118061, Goyal et al., and Glowacki et al. Accordingly, withdrawal of the Section 103 rejections is respectfully requested.

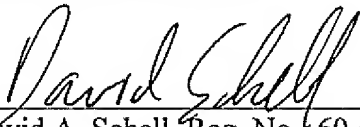
Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicants' undersigned representative at the number listed below.

The Commissioner is hereby authorized to charge any fees, which may be required, or credit any overpayment, to Deposit Account Number 50-3797.

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Respectfully submitted,



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